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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,603	02/28/2002	Anita Orhand	PF010026	1956

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EXAMINER

SEFI, BEHROOZ M,

ART UNIT PAPER NUMBER

2621

DATE MAILED: 09/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/086,603

Applicant(s)

ORHAND ET AL.

Examiner

Behrooz Senfi

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/13/2006 has been entered.

Response to Amendment

2. Applicant's arguments filed 07/13/2006 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 5 – 6, 8 – 10 and 19 – 20 are rejected under 35 U.S.C. 103(a) as being anticipated by Katata et al (US 6,088,061).

Regarding claims 1 and 19 - 20, Katata '061 teaches, MPEG "block wise coding of digital video images (i.e. fig. 1) in which each block is assigned a specific resolution dependent on a zone in which this block is located (i.e. col. 12, lines 31 – 44, foreground and/or part images) an image comprising at least two zones to which

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different resolution are assigned (foreground and background, which have different resolution) characterized in that the mixed blocks straddling two zone of different resolutions are detected (col. 17, lines 29 – 40, the predicted block is the mixed blocks), the mixed blocks are constructed by determining the zone corresponding to each pixel of these mixed blocks and by allocating the resolution of this specific zone to this pixel to get constructed mixed blocks (col. 12, lines 31 – 40 and col. 17, lines 29 – 40, detection of mixed state/block of pixels in the boundary of the image and zone corresponding to each pixel of these mixed blocks is determined by pixel weighted value and foreground and background, which have different resolution, background image is consider as lower layer and foreground or part images are consider as upper layer).

Katata is silent in regards to explicitly mention “image being coded by using transformation of blocks from the spatial domain to the frequency domain”.

However, Katata teaches, MPEG block wise coding, as discussed with respect to claim 1 above. Examiner takes Official Notice to note that; using DCT unit for transforming picture data/blocks from the spatial domain to a frequency domain and vice verses is so well known and is within the scope of MPEG block wise processing of Katata reference. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to implement such teaching in an effort for transforming blocks from spatial to frequency domain.

Regarding claim 3, Katata '061 teaches, the coding of an image being performed by a coding of a base layer and of an improvement (enhancement) layer (figs. 5 and 6,

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lower and upper layer encoding), and at least one zone of low resolution, or background zone, and at least one zone of high resolution, or zone of interest, is allocated to the image, via differences in coding the improvement layers of the pixels lying in these zones, have been discussed with respect to claim 1 above.

Regarding claim 5, Katata '061 teaches, the base layer and the improvement layer being determined separately, the allocation of resolution to the pixels of a mixed block is performed by taking account both of the base and of the improvement layer, (fig. 6, abstract).

Regarding claim 6, Katata '061 teaches, the improvement layer of the mixed block is determined by deducting the base layer from this mixed block whose pixels are coded according to different resolution (col. 17, lines 35 – 40).

Regarding claim 7, the limitations claimed are substantially similar to claim 1 above. Therefore, the ground for rejecting claim 1 also applies here.

Regarding claim 8, Katata '061 teaches, mixed block is allocated the lowest of the resolutions of the zones which it contains and that in the course of a second step the resolution of the pixels of this block lying in a zone of higher resolution (predicted block is the mixed blocks, col. 17, lines 29 – 40).

Regarding claims 9 - 10, Katata '061 teaches, the lowest resolution is obtained either via the base layer, or via the combination of the base layer with at least one improvement layer (col. 17, lines 35 – 40).

Claim Rejections - 35 USC § 103

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 11 – 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katata '061 in view of Li (US 2002/0051488).

Regarding claim 2, Katata '061 teaches, MPEG block-wise video coding, and detecting different zones resolution, as discussed in claim 1 above. Katata '061 teaches MPEG encoding. But is silent in regards to image segmentation according to criteria of colours, textures, brightness and/or motion of the pixel.

Li '488 in the same field teaches, image segmentation according to criteria of colors, textures, brightness and/or motion of the pixel, MPEG4 (i.e. page 1, sections 0003 - 0005).

In view of the above, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to specifically use MPEG4 in katata video coding for the purpose of shape and texture coding of video images as taught by Li patent.

Regarding claim 11, combination of Katata '061 and Li '488 teaches, mixed block comprising two adjacent zones, one having a first resolution and the other a second resolution greater than the first (page 1, section 0011 of Li).

Regarding claim 12, combination of Katata '061 and Li '488 teaches, quantization interval used to code zones of lowest resolution (col. 10, lines 25 – 28 of Katata).

Regarding claims 13 - 16, the limitation, the closer the pixels of the first zone are to the second zone, the more their resolution increased; claim 13" are within the scope of the katata reference. Since it is known that, those pixels of the lower (first) zone that are closer to the upper (enhancement) zones have higher resolution, and intermediate resolution is allocated to all the pixels of the first zone, in claim 14 (Katata, fig. 2, H1, intermediate layer), and intermediate resolution of each pixel of the first zone is a linear function of the distance of this pixel from the second zone, in claim 15 and 16, it is a common knowledge that intermediate pixel/pixel between the first zone and the second zone have a liner function with respect to the distance to each zones.

Regarding claim 17, combination of Katata '061 and Li '488 teaches, for the detection of the mixed blocks, use is made of a mask reproducing the shape of the zones in such a way as to associate the pixels of the image with a zone and to determine the resolution applied to these pixels (fig. 1 – 6, and abstract of Li).

7. Claim 4, is rejected under 35 U.S.C. 103(a) as being unpatentable over Katata '061 in view of Jiang (US 2002/0118743).

Regarding claim 4, Katata '061 teaches, MPEG block-wise video coding, and Predictive coding, which is a differentiate coding (col.22, lines 30 – 45).

Katata '061 is silent in regards to, residual used wholly or partly to define the improvement layer.

However, such features are well known and used in the prior art of the record as

evidenced by Jiang (i.e. fig. 1, 14 and page 2, section 0030, residual calculator).

In view of the above, taking the combined teaching of Katata and Jiang as a whole, it would have been obvious to one skilled in the art at the time of the invention was made to calculate residual differences between the base and enhancement layer to define the enhancement layer based on the residual difference, as suggested by Jiang (page 2, section 0030, residual calculation).

Allowable Subject Matter

8. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: the prior art of the record fails to anticipate or rendered obvious the limitation, characterized in that a coefficient $A(i,j)$ calculated according to the formula $A(i,j) = (PQ/c) + v'(ij)$, is allocated to any pixel $(P(i,j))$ situated at a row i and at a column j , where c is a constant and $v''(i,j)$ is the mask value allocated to the pixel $P(i,j)$ by this mask, the resolution $N(i,j)$ of each pixel $(P(i,j))$ of a mixed block then being equal to:

$$N(i,j) = A(i,j) \cdot Z_{in}(i,j) + (1 - A(i,j)) \cdot (Z_{fd}(i,j)),$$

where $Z_{fd}(i,j)$ represents the resolution allocated to the background zone where this pixel $P(i,j)$ was located and $Z_{in}(i,j)$ represents the resolution allocated to the zone of interest neighbouring this background zone.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Behrooz Senfi** whose telephone number is **(571) 272-7339**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mehrdad Dastouri** can be reached on **(571) 272-7418**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

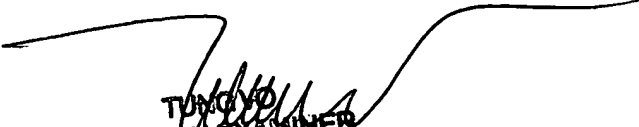
(571) 273-8300

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, Va. 22314.

Any inquiry of a general nature or relative to the status of the application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is **(571) 272-6000**.

B. M. S.

9/25/2006


TUNGVO
PRIMARY EXAMINER